Remarks

In view of the foregoing amendments and these accompanying remarks, it is respectfully requested that the application be placed in condition for allowance.

Attention is directed to the above amendment to the specification in response to the Examiner's objection in paragraph 1 of the instant office action. The new title indicates the invention which is the use of multiple turbines for increased dynamics of the rotor.

As to the Examiner's rejection under 35 USC 102 of claims 1-6, the applicant respectfully disagrees. The cited Column 4, lines 28-35 of Lippmaa does not recite the use of turbines. In Column 4, lines 17-22 the use of a turbine is discussed. While the plural turbines is used, taken in context the use of plural for turbines in the patent is inappropriate. Column 4, line 17-18 refers to a single conduit 18 supplying gas to the blades of the turbine. Figure 2 clearly indicates conduit 18 supplying gas to a single end of the rotor 4. It is inappropriate to define the term "turbines" in Lippmaa's invention to indicate anything other than a single turbine which can be implemented by the conduit 18 operating either at one or both ends of rotor 4 in a uniform manner .

The present application clearly indicates the use of turbines 3 and 6 and optionally 4 and 5 at both ends of the rotor. Each turbine of the present invention is supplied by a different conduit which is individually controlled by execution unit 8. This allows rapid dynamic control of the rotor rotation and for reversing rotation. This is not possible or taught by Lippmaa. Column 4, lines 18-19 of Lippmaa specifically states the single stream of compressed gas from conduit 18 acts on the blades or recesses 7 of the turbine and "…causes the rotor 4 to rotate rapidly and steadily." This indicates the results of applying Lippmaa is a steady high speed rotation of the rotor. Column 4, lines 20-22 indicates changes in the rotational speed of the rotor may be accomplished by varying the pressure in conduit 18, however, this as is known by anyone skilled in the art only permits a relatively slow stabilizing change in rotational speed. According to the

teaching of Lippmaa there is no counteracting force, thus when pressure is removed from conduit 18 the momentum of rotor 4 will maintain the rotational speed until it gradually slows. The use of multiple turbines, individually controlled by independent conduits of air, which can be rotated in an opposite direction allows rapid changes to the rotational speed of the rotor and reverse operation of the rotor. This is accomplished not only by reducing the pressure of a turbine acting in the direction of rotation but by applying additional pressure to a turbine acting in a direction opposite to the rotation of the rotor.

In fact, one skilled in the art understands the device in Lippmaa can only operate in a single direction regardless of the number of turbines purported to be use. All turbines are controlled by conduit 18 which is controlled by an execution unit. As the conduit 18 is stationary it is impossible to create a reversing force on the turbine. The jet of air from conduit 18 will always cause a rotation of the rotor in the same direction. Even if a second turbine for opposite rotation is implemented in Lippmaa since the same pressure would strike that turbine it would cancel the first turbine. Thus, any additional turbines are redundant in Lippmaa and cannot produce the results of rapid dynamic rotational changes in the rotor or the benefit of reversed rotation.

Since claim 1 is novel and not anticipated by the prior art it is requested that the rejection of claims 2-6 be removed.

Further, with respect to rejection of claim 3, Lippmaa discloses that “The lids 5 are cone-shaped, but cylindrical lids are also possible” (Column 3, lines 23-24). Nothing is disclosed about the diameters of cylindrical turbines. In the present application the use of turbines with work area less than the diameter of the rotor is very important for achieving rapid dynamics of rotation. Lippmaa, in fact, was not concerned with rapid dynamics of rotation.

The coil in Lippmaa is wound on a cylindrical frame (Figure 1). There are no sheets for fixing the coil at all. Thus this feature is not present in the cited art.

Therefore, claims 4, 5, 6 and 7 are novel over the cited prior art which does not disclose the use thin non conductive sheets.

Further with respect to claim 7, the ratio of the length and thickness of the sheets is important for the present application as the coil must be supported firmly with minimum distortions of the magnetic field homogeneity. The fast dynamics of rotation requires using small diameters of rotors where the signal is much more sensitive to construction features and details around the sample. As Lippmaa does not contain these sheets it is impossible for it to be obvious to present the optimal ration for this feature.

Therefore, the claims are novel over the cited prior art and not anticipated or obviated.

It is, therefore, requested that a Notice of Allowance issue and that all of the pending claims be allowed.

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Respectfully submitted,
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